WE CLAIM:

1. A method of predicting an empty seat condition for a vehicle seat having an occupancy sensing system with a sensor array assembly, said method including the steps of:

determining a first resultant value based on the change between the differences among a first series of sensor readings taken from the sensor array over a first predetermined period of time;

determining a second resultant value based on the change between the differences among a second series of sensor readings taken from the sensor array over a second predetermined period of time;

summing said first and second resultant values to determine if the summed value is negative;

calculating the change in the first and second resultant values as a function of time to determine if the calculated change is greater than a predetermined value; and

classifying the vehicle seat as empty if the summed value is negative and calculated change is greater than the predetermined amount.

2. A method as set forth in claim 1 wherein the step of determining if the summed value is negative further includes the step of re-determining the first and second resultant values and re-summing until the summed value is negative.

3. A method as set forth in claim 1 wherein the step of determining if the calculated change between the first and second resultant values is greater than a predetermined value further includes the steps of:

re-determining the first and second resultant values and re-summing until the summed value is negative; and

re-calculating the change between the first and second resultant values until the change is greater than the predetermined value.

4. A method as set forth in claim 1 wherein the step of determining a first resultant value further includes the steps of:

measuring the individual sensor outputs from the sensor array;

computing a first average value of the sensor readings to yield a first sensor reading in the first series of sensor readings;

re-measuring the individual sensor outputs from the sensor array;

computing a second average value of the sensor readings to yield a second sensor reading in the first series of sensor readings;

re-measuring the individual sensor outputs from the sensor array;

computing a third average value of the sensor readings to yield a third sensor reading in the first series of sensor readings.

5. A method as set forth in claim 4 wherein the step of determining a first resultant value further includes the step of summing the first average value with the second average value to yield a first difference value.

6. A method as set forth in claim 5 wherein the step of determining a first resultant value further includes the step of summing the second average value with the third average value to yield a second difference value.

7. A method as set forth in claim 6 wherein the step of determining a first resultant value further includes the step of summing the first and second difference values to yield the first resultant value.

8. A method as set forth in claim 1 wherein the step of determining a second resultant value further includes the steps of:

measuring the individual sensor outputs from the sensor array;

computing a first average value of the sensor readings in the second series of readings to yield a first sensor reading;

re-measuring the individual sensor outputs from the sensor array;

computing a second average value of the sensor readings in the second series of readings to yield a second sensor reading;

re-measuring the individual sensor outputs from the sensor array;

computing a third average value of the sensor readings in the second series of readings to yield a third sensor reading.

9. A method as set forth in claim 8 wherein the step of determining a second resultant value further includes the step of summing the first average value in the second series of sensor readings with the second average value to yield a first difference value.

10. A method as set forth in claim 9 wherein the step of determining a second resultant value further includes the step of summing the second average value in the second series of sensor readings with the third average value to yield a second difference value.

11. A method as set forth in claim 10 wherein the step of determining a second resultant value further includes the step of summing the first and second difference values of the second series of sensor readings to yield the second resultant value.

12. A method as set forth in claim 1 which includes a first step of determining if the occupancy sensing system is classifying the sensor array output as indicative of an empty seat condition and reinitiating the method if the occupancy sensing system is classifying the sensor array output as indicative of an empty seat.

13. A method as set forth in claim 1 wherein the step of classifying the vehicle seat as empty further includes the step of reinitiating the method if the summed value is negative and the calculated change is greater than the predetermined amount to confirming an empty seat condition.

14. A method as set forth in claim 10 wherein the step of summing the second average value of the second series of sensor readings with the third average value of the second series of sensor readings to yield a second difference value further includes the steps of:

substituting the third average value of the first series of sensor readings for the second average value of the second series of sensor readings and substituting a fourth average value taken at some predetermined time after taking the third average value for the first series of sensor readings as the third average value of the second series of sensor readings.

15. A method of predicting an empty vehicle seat for an occupancy sensing system having a vehicle seat with a sensor array, said method including the steps of:

measuring the individual sensor outputs from the sensor array;

computing a first average value of the sensor readings to yield a first sensor reading;

re-measuring the individual sensor outputs from the sensor array;

computing a second average value of the sensor readings to yield a second sensor reading;

re-measuring the individual sensor outputs from the sensor array;

computing a third average value of the sensor readings to yield a third sensor reading;.

re-measuring the individual sensor outputs from the sensor array;

computing a fourth average value of the sensor readings to yield a fourth sensor reading;.

summing the first average value with the second average value to yield a first difference value;

summing the second average value with the third average value to yield a second difference value;

summing the third average value with the fourth average value to yield a third difference value;

summing the first and second difference values to yield a first resultant value;

summing the second and third difference values to yield a second resultant value;

summing said first and second resultant values and determining if the summed value is negative;

calculating the change in the first and second resultant values as a function of time to determine if the calculated change is greater than a predetermined value; and

classifying the vehicle seat as empty if the summed value is negative and calculated change is greater than the predetermined amount.

16. A method as set forth in claim 15 that includes a first step of determining if the occupancy sensing system is classifying the sensor array output as indicative of an empty seat condition and reinitiating the method if the occupancy sensing system is classifying the sensor array output as indicative of an empty seat.

17. A method as set forth in claim 15 wherein the step of classifying the vehicle seat as empty further includes the step of reinitiating the method if the summed value is negative and the calculated change is greater than the predetermined amount to confirming an empty seat condition.